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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,418	12/14/2001	Douglas J. Bradley	10541-794	6340

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EXAMINER

THOMPSON, KENNETH L

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/017,418

Applicant(s)

BRADLEY ET AL.

Examiner

Kenn Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 18-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-13, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obeshaw, U.S. 6,586,110 in view of VanAuken, U.S. 4,173,670.

Regarding claim 9, Obeshaw discloses in figures 1-8 a composite tubular shaft. Obeshaw discloses a plurality of discrete elongated stiffening mold members (26). Obeshaw discloses each elongated stiffening mold member arranged parallel to a central axis (longitudinal axis of 20). Obeshaw discloses composite fibrous material (22; col. 11, lines 36-41) extending around the elongated stiffening mold members in a cylindrical shape to hold the elongated stiffening mold members in place. Obeshaw discloses the composite tubular shaft can be used in the automotive industry whenever a lightweight strong cylindrical object is required (col. 15, lines 14-25). Obeshaw discloses use of the composite tubular shaft as a torsion bar which is inherently capable of performing as a drive shaft. However Obeshaw does not specifically disclose use of the composite tubular shaft as a drive shaft. VanAuken teaches use of a composite tubular shaft being used as a drive shaft to provide a light weight axially stiff drive shaft capable of higher critical speeds (col. 1, lines 44-48). It would have been obvious to one having ordinary skill in the art at the time of the invention to use the composite tubular shaft disclosed by Obeshaw as a drive shaft; as taught by VanAuken to provide a light weight axially

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stiff drive shaft capable of higher critical speeds. Moreover it is well known in the art that a drive shaft of composite material requires less power to rotate than a comparable steel shaft; which results in less engine wear and more power transfer to the drive wheels.

As to claims 10-12, Obeshaw discloses the elongated stiffening mold members have a circular shape, trapezoidal and a "T" shaped cross section (col. 12, lines 16-27). Applicant should note that a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

As to claim 13, Obeshaw discloses the elongated stiffening mold members (26) are removable to leave structural voids (6).

As to claim 16, Obeshaw discloses the structural voids (6) extend longitudinally through the full length of the composite drive shaft (col. 14, lines 1-15).

As to claim 17, Obeshaw discloses the structural voids (6) extend longitudinally through a portion of the length of the composite drive shaft (col. 14, lines 1-15).

### ***Allowable Subject Matter***

Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or suggest all the claimed subject matter including the elongated stiffening mold members extend longitudinally through the full length nor a portion of the length of the composite drive shaft.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Holemans et al., U.S. 2003/0144062 A1 and Sanoner et al., U.S. 6,564,831 disclose a similar tube.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenn Thompson whose telephone number is 703 306-5760. The examiner can normally be reached on 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on 703 308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9326 for regular communications and 703 872-9327 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-2168.

KT

August 12, 2003



**Lynne H. Browne**  
**Supervisory Patent Examiner**  
**Group 3600**